

**THE SYSTEM REQUIREMENTS FOR THE ONLINE AUCTION BASED ON UUM STUDENTS  
PERSPECTIVE**

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**THE SYSTEM REQUIREMENTS FOR THE ONLINE AUCTION BASED ON UUM STUDENTS  
PERSPECTIVE**

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In partial fulfillment of the requirement for the degree  
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**By**

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## **ABSTRACT**

*The main objective of this study is to develop an online auction for UUM students, the student can buy or sale their belonging through by using this system after to be developed for UUM students. The design is tested on the prototype and evaluated to test the usability and acceptability of the system. The Active Server Page.Net (ASP.Net) programming language have been used in this study to develop the system of online auction for UUM student, and SPSS have been used to analysis the data after collected form the student of UUM.*

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# **CHAPTER ONE**

## **INTRODUCTION**

This chapter explains in detail about the background of the online auction and its solution in related environment and the problem statement which is related to the UUM's students who want to dispose their belongings that necessarily to be solved and gives the motivation to this study. The research questions and research objectives are expressed as in the section 1.3 and section 1.4 respectively. The scope of the study and significance of the study expressed as in the section 1.5 and section 1.6 respectively.

### **1.1 Introduction**

The fast development of communication technology caused the millions of auction listings in thousands of categories on auction websites, for example eBay, Yahoo and uBid (Yen and Lu, 2008). Online auctions conducted over the Internet provide substantial sales growth chances for the intermediaries and substantial unit cost reduction for purchaser of chosen commodities (Emiliani, 2000). Recently, online auctions activities have increased rapidly, leading to a transaction revolution that is

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## Reference

- Abdul Hamid @ Hamid bin Haji Hassan (2003). Requirement analysis on wireless network infrastructure in UUM College. A master project in partial fulfillment of the requirements for the degree of Master of Science (Information Technology), University Utara Malaysia.
- Albert, M. R. (2002). E-buyer Beware: Why Online Auction Fraud should be Regulated, *American Business Law Journal*. Vol. 39, No. 4, pp. 575-643.
- Andersson, Bergsten, A., Thomas, Lindh, J. (2008). A case study of documentation's significance in ERP system development projects. Bachelor's thesis in Informatics. Jonkoping University: Jonkoping International Business School.
- Ariely D. (2003) Buying, Bidding, Playing, or Competing? Value Assessment and Decision Dynamics Online Auctions, *Journal of Consumer Psychology*. No. 13, pp. 113–123.
- Bajari, P. and Hortagsu, A. (2003). Winner's Curse, Reserve Prices and Endogenous Entry: Empirical Insights from eBay Auctions, *RAND Journal of Economics*, Vol. 34, No. 2, pp. 329-355.
- Bakos, J. Y. (1998). "The Emerging Role of Electronic Marketplaces on the Internet". *Commun ACM*, Vol. 41, No. 9, pp. 35-42.
- Bapna, R., Goes, P. & Gupta, A. (2003). Analysis and Design of Business-to-Consumer Online Auctions, *Journal of Management Science*. Vol. 49, No. 1, pp. 85–101.
- Becherer, R. C. & Halstead, D. (2004) 'Characteristics and internet marketing strategies of online auction sellers', *Int. J. Internet Marketing and Advertising*, Vol. 1, No. 1, pp.24–37.

- Brynjolfsson, E. Jeffrey, Hu Y. & Smith. M. D. (2003). Consumer Surplus in the Digital Economy: Estimating the Value of Increased Product Variety at Online Booksellers. *Management Science*, Vol. 49, No. 11, pp. 1580-1596.
- Corcoran, C. (1999). The auction economy, Red Herring 69. Retrieved March 22, 2009 from: <http://www.redherring.com/mag/issue69/NEWSauctions.html>.
- Centre for Technology in Government, University at Albany. (1998). *Models for Action Project: Developing Practical Approaches to Electronic Records management and Preservation*, A Survey of System development Process Models.
- Dholakia, U. M., & Soltysinski, K. (2001). Coveted or overlooked? The psychology of bidding for comparable listings in digital auctions. *Marketing Letters*, Vol. 12, No. 3, pp. 225–237.
- Eaton, D.H. (2005). Valuing Information: Evidence from Guitar Auctions on eBay, *Experimental Economics*, Vol. 9. No. 2, pp. 79-101.
- eBay, (2003), Company Overview, Retrieved February 16, 2009 from: <http://pages.ebay.com/community/aboutebay/overview/index.html>.
- Ely, J. C. & Hossain. T. (2006). Sniping and Squatting in Auction Markets. Retrieved March 27, 2009 from: <http://ihome.ust.hk/tanjim/squat.pdf>.
- eMarketer. (1999). Top 10 Sites eBay. Retrieved March 18, 2009 from: [http://www.emarketer.com/elist/archives/t10misc/top10\\_ebay.html](http://www.emarketer.com/elist/archives/t10misc/top10_ebay.html).
- Emiliani, M. L. (2000). Business-to-business online auctions: key issues for purchasing process improvement. *Supply Chain Management: An International Journal*. Vol. 5, No. 4, pp. 176-186.

- Freedman, D. (2000). Can you survive the eBay economy?, *International Conference.*, Vol. 22, No. 3, pp.88–95.
- Halsted, D. & Becherer, R. C. (2003). Internet auction sellers: does size really matter?. Vol. 13, No. 3, pp. 183-194.
- Haubl, G. & Popkowski, L. P. T. L. (2001). The effects of minimum prices on value judgments in auctions. *Working paper, School of Business, University of Alberta.*
- Hoffer, J. A., George, J. F & Valacich, J. S. (2004). *Modern Systems Analysis and Design* (2nd Edition). United Kingdom : Addison Wesley Longman.
- Gray S. & Reiley. D. (2007). Measuring the Benefits to Sniping on eBay: Evidence from a Field Experiment. Retrieved March 25, 2009 from: <http://www.u.arizona.edu/reiley/papers/Sniping.pdf>.
- Kendall, P. A. (1996). *Introduction to system analysis and design: A structured approach*, Irwin, Times Mirror Higher Education Group, USA.
- Lim chee chian, (2004). Multimodal-based mobile application: a development of prototypes for accessing students academic result at UUM. A master project in partial fulfillment of the requirements for the degree of Master of Science (Information Technology), University Utara Malaysia.
- Lin, Z., Li, D., Janamanchi B.& Huang W. (2004). Reputation Distribution and Consumer-to-Consumer Online Auction Market Structure: An Exploratory Study. *Decision Support Systems*, Vol. 12, No. 3, pp. 22–27.
- Liu H., Wang, S. & Fei, T. (2003). Multicast-based online auctions: a performance perspective. *Benchmarking: An International Journal*. Vol. 10 No. 1, pp. 54-64. USA.

- Lucking-Reiley, David. (1999). Using field experiments to test equivalence between auction formats: Magic on the internet. *American Economic Review*, No. 89, pp. 1063–1080.
- Lucking-Reiley, D., Bryan, D., Prasad, N., Reeves, D. (2004), Pennies from eBay: the Determinants of Price in Online Auctions, *Journal of Industrial Economics*, Vol. 55, No. 2, pp. 223-233.
- Machlis, S. (1998). Online auction services thriving, *International Conference Computer world*, Vol. 32, No. 24, pp.1, 17.
- Mohd Yusuf Bin Md Saad (2005). Requirements analysis and proposed model for a wireless network infrastructure in Bukit Kachi student college UUM. A master project in partial fulfillment of the requirements for the degree of Master of Science (Information Technology), University Utara Malaysia.
- Mohammed, Q., and Hofmeyer, G. (2007), An investigation into the factors influencing the adoption of B2B trading exchanges in small businesses. *European Journal of Information Systems* . pp. 202-215.
- National Consumers League (2003), Internet Fraud Watch, Retrieved March 16, 2009 from: <http://www.nclnet.org/internetfraud02.htm>.
- Nielsen, J. & Landauer, T. (2001). A mathematical model of the finding of Usability problems. In ACM INTERCHI'93. Netherlands: Amsterdam.
- Nielsen, J. (2000). *Scenarios in Discount Usability Engineering*. Envisioning work and Technology. Book under preparation. Netherlands: Amsterdam.



- Parente, D. H., Venkataraman, R., Fizel, J. & Millet, I. (2004). A conceptual research framework for analyzing online auctions in a B2B environment. *Supply Chain Management: An International Journal*. Vol. 9, No. 4, pp. 287-294.
- Pinker E. J., Seidmann A. & Vakrat Y. (2003). Business and Research Issues, *Journal of Management Science*. Vol. 49, No. 11, pp. 1457–1484.
- Quaddus, M., Xu, J., Hoque, Z. (2005). Factors of Adoption of Online Auction: A China Study. *ICEC'05*.
- Resnick, P., Zeckhauser, R., Friedman, E., Kuwabara, K. (2000). Reputation Systems, *Communications of the ACM*. Vol. 43, No. 12, pp. 45-48.
- Wilcox T., Ronald. E. and Amateurs (2000). The Role of Experience in Internet Auctions. *Marketing Letters*, Vol.11, No. 4, pp. 363-374.
- Ockenfels, A. & Roth. A. E. (2002). Last-Minute Bidding and the Rules for Ending Second-Price Auctions: Evidence from eBay and Amazon Auctions on the Internet. *The American Economic Review*, Vol. 92, No. 4, pp.1093-1103.
- Ockenfels, A. & Roth. A. E. (2002). The Timing of Bids in Internet Auctions: Market Design, Bidder Behaviour, and Artificial Agents. *Artificial Intelligence Magazine*, Vol. 23, No. 3, pp. 79-87.
- Sinclair, J. T. (2007). eBay Business the Smart Way. United States of America: Amocon.
- Wang, W., Hidvegi, Z. & Whinston, A. B. (2000). Economic Mechanism Design for Securing Online Auction, *Economic Mechanism Design for Securing Online Auctions*.

- Wang, W., Hidvegi, Z. & Whinston. A. B. (2004) Shill-Proof Fee (SPF) Schedule: the Sunscreen against Seller Self-Collusion in Online English Auctions. Retrieved April, 2009 from: <http://www.wenli.net/Application/Wenli-Shill.pdf>.
- Wenyan, H. and Bolivar, A. (2008). Online Auctions Efficiency: A Survey of eBay Auctions. *Alternate Track: Industrial Practice and Experience*. China.
- Wenyan, H. & Bolivar, A. (2008). Online Auctions Efficiency: A Survey of eBay Auctions. *ACM 978-1-60558*. Beijing, China
- Whinston, Ba, S., A. B. & Zhang H. (2003). Building trust in online auction markets through an economic incentive mechanism. *Journal of Decision Support Systems*. No. 35, pp. 273– 286.
- Wilcox R. T. (2000). Experts and amateurs: The role of experience in Internet auctions. *Marketing Letters*, No.11, pp 363–374.
- Zhang, P., Carey, J., Te'eni, D., Tremaine, M. (2004). Integrating Human-Computer Interaction Development into SDLC: A Methodology. *Proceedings of the Americas Conference on Information Systems*. New York.
- Yen, C. H. & Lu, H. P. (2008). Factors influencing online auction repurchase intention. Vol. 18 No. 1, pp. 7-25.
- Yen, C. H. & Lu, H. P. (2008). Effects of e-service quality on loyalty intention: an empirical study in online auction. Vol. 18 No. 2, pp. 127-146.